

USSN: 09/879,257  
Yamamoto, S.

### REMARKS

The Applicants appreciate the Examiner's thorough examination of the subject application. Applicants request reconsideration of the subject application based on the following remarks.

Claims 52 thru 58 have been amended. Support for the amendments to the claims can be found on pages 20 and 21 of the application as filed. No new matter has been added by the amendments to the specification or the claims.

1. Claims 52-58 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The Examiner maintains that "Applicants' arguments filed 10/01/2004 have been fully considered but they are not persuasive. Applicants' position is that new claims 52-58 included the characterization of the enzymes as hybrid glucosc-6-phosphate dehydrogenase. The Examiner respectfully disagrees for reasons of record as supplemented below.

It is not apparent that the modified enzyme as recited in the claims continues to have any glucosc-6-phosphate dehydrogenase activity. Thus, the claims are interpreted as not being limited to any glucosc-6-phosphate dehydrogenase activity.

The claims are genus claims that are directed toward any hybrid glucose-6-phosphate dehydrogenase of any enzymatic and biological activity having an amino acid sequence of SEQ ID NO:6 that is modified by insertion or substitution in at least one of the recited positions with any peptide comprising SEQ ID NOs:1-5, 46 or 50.

The scope of the claimed genus includes many hybrid enzymes with widely differing enzymatic activities, chemical, biological, and physical characteristics. Furthermore, the genus is highly variable because a

USSN: 09/879,257

Yamamoto, S.

significant number of differences in enzymatic activities and biological functions between genus members is permitted.

The specification describes a genetically modified glucose-6-phosphate dehydrogenase (G6PDH) comprising the amino acid sequence of SEQ ID NO: 6 which is modified to have a peptide inserted into at least one specific position selected from the group consisting of the position between amino acid residues 294-295, between amino acid residues 302-303, between amino acid residues 305-306, between amino acid residues 306-307, between amino acid residues 308-309, between amino acid residues 309-310, between amino acid residues 362-393, the N-terminal, and the C-terminal; wherein said modified amino acid sequence with SEQ ID NO: 6 continues to have glucose-6-phosphate dehydrogenase activity, said peptide consists of at least 6 amino acid residues of an amino acid sequence selected from the group consisting of SEQ ID NOs: 1-5, 46, and 50; and an anti-CRP antibody binds to the peptide (see Table 1 and examples).

The specification fails to provide a written description of additional representative hybrid enzymes as encompassed by the genus claims. Applicants have failed to sufficiently describe the claimed invention, in such full, clear, concise, and exact terms that a skilled artisan would recognize Applicants were in possession of the claimed invention.

Amending the claims to recite the following may overcome the rejection: an isolated and genetically modified glucose-6-phosphate dehydrogenase (G6PDH) comprising the amino acid sequence of SEQ ID NO: 6 which is modified to have a peptide inserted into at least one specific position selected from the group consisting of the position between amino acid residues 294-295, between amino acid residues 302-303, between amino acid residues 305-306, between amino acid residues 306-307, between amino acid residues 308-309, between amino acid residues 309-310, between amino acid residues 362-393, the N-terminal, and the C-terminal; and wherein said peptide consists of at least 6 amino acid residues of an amino acid sequence selected from the group consisting of SEQ ID NOs: 1-5, 46, and 50, wherein said modified amino acid

USSN: 09/879,257  
Yamamoto, S.

sequence with SEQ ID NO: 6 continues to have glucose-6-phosphate dehydrogenase activity".

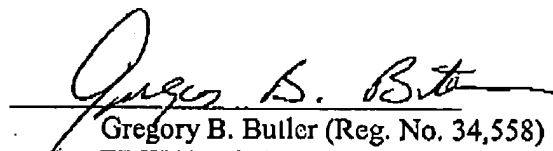
Applicants have amended the subject matter of claims 52-58 as suggested by the Examiner. Applicants have also separated the SEQ ID Nos 1-5, 46 and 50 into individual claims.

In summary, reconsideration of this application and the allowance of Claims 52-58 of this application as hereinabove added in response to this communication are respectfully requested for the reasons stated above.

Finally, Applicants believe that additional fees are not required in connection with the consideration of this response to the currently outstanding Official Action. However, if for any reason a fee is required, a fee paid is inadequate or credit is owed for any excess fee paid, you are hereby authorized and requested to charge and/or credit Deposit Account No. 04-1105, as necessary, for the correct payment of all fees which may be due in connection with the filing and consideration of this communication.

Respectfully submitted,

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